

# The Necessary Creation of “Pre-Entrepreneurs” in India: The Experiment of Maker Training in Schools to Develop Future Entrepreneurs

ISAM  
2018  
Poster No.:  
23

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## INTRODUCTION

The Maker Movement, which generally refers to the development of individuals with the ability to “make” something, is generating a lot of interest among education and development experts as a new approach to attain better learning, more practical, outcomes. [1] This is especially true in the case of India as it attempts to bolster its economy by creating more entrepreneurs through maker labs.

The Asian Development Bank’s (ADB) 2017 Asian Development Outlook update (ADO) downgraded India’s Gross Domestic Product (GDP) growth to 7% in fiscal year (FY) 2017. [1] Decreases in consumer spending and business investments due to demonetization and the roll out of the new good and services tax (GST). A year later, actual GDP growth was pegged at 6.6% in FY 2017. Despite this, economists remain optimistic about India’s GDP growth - 2018 ADO projects 7.3% growth in FY 2018 and 7.6% growth in FY 2019. [2]

Although this projection is above the 6.0% regional growth rate the same report estimates for Asia and the Pacific, India has set a target of 10% year-on-year growth until 2032. Such growth allows India to generate 175 million jobs and achieve a 0% below poverty line population. Though recent financial reforms help in achieving these targets, more deliberate interventions are required to spur sustainable economic growth in India until 2032.

Recently, development institutions working in India view entrepreneurial education and training (EET), through maker and tinkering labs, as a legitimate opportunity to create an entrepreneurial economy, that literature shows is an inclusive approach to socioeconomic progress. [3]

With more investments and emphasis on EETs in India, the research theorizes that early introduction to maker and social skills training in an adolescent’s school life is positively correlated to a student’s academics, innovation skills, entrepreneurship attitudes, and social engagement that leads to long-term socioeconomic progress. Through randomized control trials (RCT), the research initiates an 8-year longitudinal study on the introduction of maker skills and social skills.

## RESEARCH GOAL

The research studies the impact of maker training intervention on middle and high school students in India and its impact on their academic performance, innovation skills, en-

trepreneurial attitudes, and social engagement.

## CONCEPTUAL FRAMEWORK

The study adapts a Human Capital development lens to understand the impact of maker-training laboratories on the development of a student’s entrepreneurial knowledge, skills, attitudes, and behaviors. Literature shows that this is an appropriate construct to investigate EET outcomes. [4] Fig 1 outlines the theory tested in this study that shows how building the entrepreneurial capacity of a student involves four major stages.

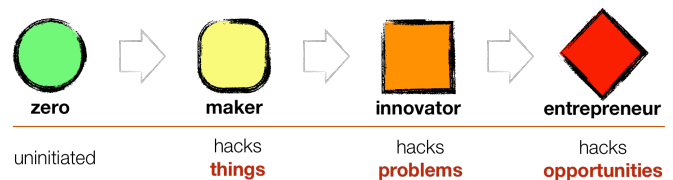


Fig.1 Zero to Entrepreneur Approach

### A. ZERO

Students at this stage are new to the concept of innovation and entrepreneurship. The lack of exposure trains students to be primarily job seekers, following subject syllabus and grades, who have not been exposed to practical application of their learning.

### B. MAKER

Students exposed to maker-training acquire knowledge and develop self-efficacy to imagine, design, and create things. The uses of digital design and fabrication tools to speed up the cycle of practice and learning is an advancement in one’s skills.

### C. INNOVATOR

Students develop critical thinking skills and identify unmet human needs in communities through practice of high-cognitive analytical approaches such as design thinking.

### D. ENTREPRENEUR

Students develop enterprising behaviors and attitudes to constantly create market viable and accessible solutions for problems that consumers want solved. Define and evaluate the need and strategize how to reach the solution to customer profitably.

This approach follows a learning theory that emanates from constructionist approach which shows that knowledge is built through three phases: making, tinkering, and engineering. [5]

The study's conceptual framework builds on this approach and deliberately aligns to entrepreneurial outcomes.

2013, pp. 211-224.

## THEORETICAL FRAMEWORK

The study operationalizes the conceptual framework through the insertion of maker skills and social skills components in select tinkering labs in India. Field Researchers, or Master Mentors, will introduce these sessions and work collaboratively with schools while collecting the necessary data outlined in Fig 2.

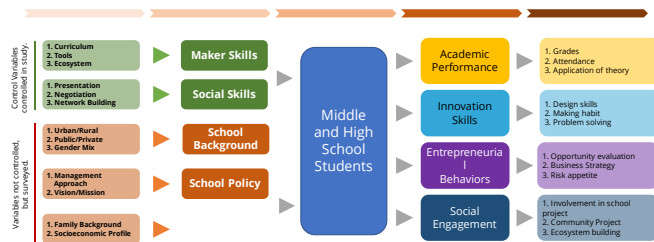


Fig.2 Theoretical Model of Study

## RESEARCH CONTRIBUTIONS

### A. THEORETICAL SIGNIFICANCE

The study, given its size and magnitude, can produce better insights that establish better, more accurate nuances in existing EET conceptual frameworks.

### E. EMPIRICAL SIGNIFICANCE

This research presents the opportunity to test linkages and relationships between emergent concepts on EET and how this directly impacts the Indian labor market.

### F. METHODOLOGICAL SIGNIFICANCE

The scale of the study is both a challenge, and an opportunity. Establishing a model is a springboard to future studies that aim to understand the EET landscape in India and other countries.

## RESEARCH IMPLICATIONS

The study, given its potential size and magnitude, provides an opportunity to better understand the impact of maker skills and social skills in EET. Insights and findings can concretely identify configurations that maximize entrepreneurial outcomes, effectively establishing a reliable model and approach that can be scaled and replicated in different parts of Asia.

## REFERENCES

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